APPENDIX A

Table A-1. Statistics for Lead Wipe *Clean and Test* Data

The *clean and test* subset of the data exhibit very high positive skewness and high variability. The raw data and log-transformed pre- and post-cleanup data fail the S-W test for normality (log-transformed data [pre-/post-]: S-W statistic=0.89/0.85, $p<0.0001$/$p<0.0001$). This table includes two observations that have been treated as outliers in subsequent analyses (see Section B.2.2 for details). Statistics for the data set after removal of the two outliers are provided in Table A-1a.

	Pre-cleanup	Post-cleanup
apartments sampled	214	214
buildings sampled	145	145
number of samples	680	674
nondetects	101(14.8%)	140 (20.8%)
exceedances[a]	93 (13.7%)	21 (3.1%)
mean	35.46	19.03
standard deviation	286.03	279.64
skewness	20.56	25.77
CV[b]	8.07	14.70
variance	81812.09	78199.03
maximum	6790	7250
99th percentile	470	83.2
95th percentile	76.30	16.00
90th percentile	37.30	11.00
75th percentile	12.50	8.40
median	7.32	6.38
25th percentile	3.23	2.47
10th percentile	1.86	1.86
5th percentile	1.86	1.86
1st percentile	1.86	1.86
minimum	1.86	1.86
S-W Statistic[c]	0.07	0.03
Prob Normal[d]	<0.0001	<0.0001

[a]Exceedance: lead wipe ($\mu g/ft^2$) samples that exceeded the HUD screening level of 25 $\mu g/ft^2$
[b]CV=coefficient of variation=standard deviation/mean
[c]SW-Statistic: Shapiro-Wilk statistic
[d]Prob Normal: probability the data are from a normal distribution according to S-W test

Table A-1a. Statistics for Lead Wipe *Clean and Test* Data – Outliers Removed

The *clean and test* subset of the data exhibit very high positive skewness and high variability. The raw data and log-transformed pre- and post-cleanup data fail the S-W test for normality (log-transformed data [pre-/post-]: S-W statistic=0.90/0.89, $p<0.0001/p<0.0001$). This table excludes two observations that have been treated as outliers (see Section B.2.2 for details).

	Pre-cleanup	Post-cleanup
apartments sampled	214	214
buildings sampled	145	145
number of samples	679	673
nondetects	101 (14.9)	140 (0.21)
exceedances[a]	92 (13.5)	20 (3.0)
mean	25.52	8.28
standard deviation	121.00	19.79
skewness	15.24	13.89
CV[b]	4.74	2.39
variance	14641.04	391.80
maximum	2530	394
99th percentile	366.00	83.20
95th percentile	73.00	15.50
90th percentile	37.25	10.90
75th percentile	12.50	8.40
median	7.32	6.37
25th percentile	3.22	2.47
10th percentile	1.86	1.86
5th percentile	1.86	1.86
1st percentile	1.86	1.86
minimum	1.86	1.86
S-W Statistic[c]	0.15	0.21
Prob Normal[d]	<0.0001	<0.0001

[a]Exceedance: lead wipe ($\mu g/ft^2$) samples that exceeded the HUD screening level of 25 $\mu g/ft^2$
[b]CV=coefficient of variation=standard deviation/mean
[c]SW-Statistic: Shapiro-Wilk statistic
[d]Prob Normal: probability the data are from a normal distribution according to S-W test

Table A-2. Statistics on the Reduction in Average Lead Wipe Loadings (Pre- and Post-cleanup)

Statistics for average pre-cleanup and post-cleanup residential dust lead loading ($\mu g/ft^2$) measured by wipe samples are shown, and statistics for the reduction in the average dust lead loading. The statistics describe the distribution of pre-cleanup and post-cleanup average lead loadings ($\mu g/ft^2$) that were measured in each residence. The average dust lead loadings and the reduction in the averages, continue to display substantial departures from normality; a log-transformation of the data fails to improve the fit of a normal distribution to the data (S-W statistic for reductions=0.37 0, $p<0.0001$; pre-cleanup averages: S-W statistic 0.95, p; post-cleanup averages: S-W statistic= 0.92, $p<0.0001$). Outliers were removed from the dataset (see Section B.2.2 for details).

Statistic	Reduction in average lead wipe loading	Average pre-cleanup lead wipe loading	Average post-cleanup lead wipe loading
n	214	214	214
mean	16.21	24.40	8.19
standard deviation	65.16	66.34	17.10
skewness	7.23	7.73	12.17
CV[a]	4.02	2.727	2.096
variance	4245.98	4401.40	292.29
maximum	708.21	748.95	241.67
99th percentile	289.03	294.33	39.25
95th percentile	81.65	92.44	16.08
90th percentile	31.37	44.73	11.77
75th percentile	9.50	18.44	8.44
median	1.77	8.66	6.79
25th percentile	0.00	4.94	3.01
10th percentile	-1.31	2.34	1.86
5th percentile	-3.35	1.86	1.86
1st percentile	-21.50	1.86	1.86
minimum	-163.27	1.86	1.86
S-W Statistic[b]	0.33	0.15	0.22
Prob Normal[c]	<0.0001	<0.0001	<0.0001

[a]CV=coefficient of variation=standard deviation/mean
[b]S-W Statistic: Shapiro-Wilk statistic
[c]Prob Normal: probability the data are from a normal distribution according to S-W test

Table A-3. Statistics on Reduction in Average Lead Wipe Loadings (Pre- and Post-cleanup) in Residences With Pre-cleanup Averages Greater Than the HUD Screening Level of 25 μg/ft^2

The statistics describe the distribution of pre-cleanup and post-cleanup average lead loadings (μg/ft^2) that were measured in each residence. The average dust lead loadings and the reduction in the averages show less variation and are less skewed than the complete distribution of average residential dust lead loadings. A log-transformation of the data improves the fit of a normal distribution to the data (S-W statistic for reductions=0.71, p<0.0001; pre-cleanup averages: S-W statistic=0.89, p<0.0001; post-cleanup averages: S-W statistic=0.88, p<0.0001); however, significant departures from the normal distribution model remain. Outliers were removed from the dataset (see Section B.2.2 for details).

Statistic	Reduction in average lead wipe loading	Average pre-cleanup lead wipe loading	Average post-cleanup lead wipe loading
n	36	36	36
mean	84.84	102.12	17.28
standard deviation	140.85	138.37	39.62
skewness	2.90	3.47	5.49
CV[a]	166.01	135.50	229.28
variance	19838.34	19147.47	1569.75
maximum	708.21	748.95	241.67
99th percentile	708.21	748.95	241.67
95th percentile	408.96	413.87	40.74
90th percentile	199.74	209.36	31.73
75th percentile	88.03	101.78	11.56
median	38.82	48.52	8.08
25th percentile	25.26	34.74	6.39
10th percentile	19.92	26.86	3.78
5th percentile	10.35	25.98	2.08
1st percentile	-163.27	25.86	1.86
minimum	-163.27	25.86	1.86
S-W Statistic[b]	0.64	0.56	0.32
Prob Normal[c]	< 0.0001	< 0.0001	< 0.0001

[a]CV=coefficient of variation=standard deviation/mean
[b]S-W Statistic: Shapiro-Wilk statistic
[c]Prob Normal: probability the data are from a normal distribution according to S-W test

Table A-4. Statistics for Pre-cleanup Residential Average Dust Lead Loading by Floor Group.

Average dust lead loadings ($\mu g/ft^2$) tend to decrease with increasing floor level, and variance tends to increase with increasing average dust lead loading. When grouped by floor level, the average pre-cleanup dust lead loadings show less variation and are less skewed than the complete distribution of average residential dust lead loadings. A log-transformation of the averages substantially improves the fit of a normal distribution to the data (S-W statistic for lower floor group=0.95, p=0.0149; middle: S-W statistic=0.96, p=0.0127; upper: S-W statistic=0.90, p=0.0002). Outliers were removed from the dataset (see Section B.2.2 for details).

Statistic	Floor group[a]		
	Lower	Middle	Upper
n	61	93	60
mean	39.52	21.08	14.18
standard deviation	102.71	46.41	37.98
skewness	5.84	6.97	7.06
CV[b]	2.60	2.20	2.68
variance	10549.74	2154.14	1442.33
maximum	748.95	413.87	294.33
99th percentile	748.95	413.87	294.33
95th percentile	175.15	78.40	39.48
90th percentile	73.45	38.62	21.90
75th percentile	27.23	18.44	9.54
median	9.20	10.03	7.25
25th percentile	5.46	5.27	3.80
10th percentile	2.17	2.32	2.56
5th percentile	1.86	1.96	1.98
1st percentile	1.86	1.86	1.86
minimum	1.86	1.86	1.86
S-W Statistic[c]	0.36	0.34	0.25
Prob Normal[d]	<0.0001	<0.0001	<0.0001

[a]Floor groups were defined as follows; lower: ≤ floor 3; middle: floors 4 – 10 inclusive; upper: > floor 10
[b]CV=coefficient of variation=standard deviation/mean
[c]S-W Statistic: Shapiro-Wilk statistic
[d]Prob Normal: probability the data are from a normal distribution according to S-W test

Table A-5. Statistics for Dioxin Wipe *Clean and Test* Data

The data summarized in this table are dioxin toxicity equivalency quotients (TEQs) (ng/m^2), which are the sum of 17 different chemical forms (congeners) of dioxin. The *clean and test* subset of the data exhibit high positive skewness but low variance. Very few exceedances were observed for dioxin. The raw data and log-transformed pre- and post-cleanup data fail the S-W test for normality (log-transformed data [pre-/post-]: S-W statistic=0.71/0.89, $p<0.0001$/$p<0.0001$). This table excludes one observation that has been treated as an outlier in the analysis of the dioxin wipe data (see Section B.2.3 for details). Statistics for the data set after removal of the outlier are provided in Table A-5a.

	Pre-cleanup	Post-cleanup
apartments sampled	212	212
buildings sampled	145	145
number of samples[a]	674	668
nondetects	0	0
exceedances	3 (0.4%)	4 (0.6%)
mean	0.81	0.65
standard deviation	3.95	0.28
skewness	25.75	5.27
CV[b]	0.49	0.42
variance	15.62	0.08
maximum	75.4	4.34
99th percentile	1.85	1.76
95th percentile	1.11	1.17
90th percentile	0.90	0.90
75th percentile	0.68	0.68
median	0.60	0.59
25th percentile	0.56	0.54
10th percentile	0.47	0.46
5th percentile	0.43	0.43
1st percentile	0.34	0.34
minimum	0.27	0.27
S-W Statistic[c]	0.03	0.62
Prob Normal[d]	<0.0001	<0.0001

[a]Exceedance: lead wipe samples that exceeded the HUD screening level of 25 µg/ft^2
[b]CV=coefficient of variation=standard deviation/mean
[c]S-W-Statistic: Shapiro-Wilk statistic
[d]Prob Normal: probability the data are from a normal distribution according to S-W test

Table A-5a. Statistics for Dioxin Wipe *Clean and Test* Data-One Outlier Removed

The data summarized in this table are dioxin toxicity equivalency quotients (TEQs) (ng/m^2), which are the sum of 17 different chemical forms (congeners) of dioxin. The *clean and test* subset of the data exhibit high positive skewness but low variance. Very few exceedances were observed for dioxin. The raw data and log-transformed pre- and post-cleanup data fail the S-W test for normality (log-transformed data [pre-/post-]: S-W statistic=0.88/0.89, $p<0.0001$/$p<0.0001$). One pre-cleanup observation with a value of 75.3 ng/m^2 was removed as an outlier (see Section B.2.3 for details).

	Pre-cleanup	Post-cleanup
apartments sampled	212	212
buildings sampled	145	145
number of samples[a]	673	668
nondetects	0	0
exceedances	2	4
mean	0.66	0.65
standard deviation	0.29	0.28
skewness	6.79	5.27
CV[b]	0.44	0.42
variance	0.09	0.08
maximum	5.14	4.34
99th percentile	1.81	1.76
95th percentile	1.10	1.17
90th percentile	0.90	0.90
75th percentile	0.68	0.68
median	0.60	0.59
25th percentile	0.56	0.54
10th percentile	0.47	0.46
5th percentile	0.43	0.43
1st percentile	0.34	0.34
minimum	0.27	0.27
S-W Statistic[c]	0.57	0.62
Prob Normal[d]	<0.01	<0.01

[a]Exceedance: lead wipe samples that exceeded the HUD screening level of 25 $\mu g/ft^2$
[b]CV=coefficient of variation=standard deviation/mean
[c]S-W-Statistic: Shapiro-Wilk statistic
[d]Prob Normal: probability the data are from a normal distribution according to S-W test